

Measles Key Points

2015 measles cases

- From January 1 to January 28, 2015, 84 people from 14 states in the U.S. have been reported as having measles. Most of these cases are part of a large, ongoing outbreak linked to an amusement park in California.

U.S. multi-state measles outbreak December 2014—January 2015

- The United States is currently experiencing a large, multi-state outbreak of measles linked to an amusement park in California.
 - From December 28, 2014 to January 28, 2015, 67 people from 7 states in the U.S. (AZ, CA, CO, NE, OR, UT, WA), and 2 people in Mexico, have been reported to CDC as having measles related to this outbreak.
 - Some of them have been hospitalized.
 - Most of them were unvaccinated; others did not know their vaccination status. A minority of them were vaccinated.
 - Cases have occurred in people of all ages.
 - The outbreak likely started from a traveler who became infected overseas with measles, then visited the amusement park while infectious. However, no source has been identified.
 - Comparison of the genomic sequences from 9 patients for which information was available show that all 9 are identical to the measles B3 virus type that caused the large measles outbreak in the Philippines in 2014.

CDC Health Advisory

- On January 23, 2015, CDC issued a Health Advisory to notify public health departments and healthcare facilities about the multi-state outbreak and to provide guidance for healthcare providers nationwide (<http://emergency.cdc.gov/han/han00376.asp>).

Guidance for healthcare providers

- Healthcare providers should be vigilant about measles—
 - Ensure all patients are up to date on measles, mumps, rubella (MMR) vaccine.
 - Consider measles in patients presenting with febrile rash illness and clinically compatible measles symptoms (cough, coryza, and conjunctivitis), and ask patients about recent travel internationally or to domestic venues frequented by international travelers, as well as a history of measles exposures in their communities.
 - Promptly isolate patients with suspected measles to avoid disease transmission and immediately report the suspect measles case to the health department.
 - Obtain specimens for testing from patients with suspected measles, including viral specimens for genotyping, which can help determine the source of the virus. Contact the local health department with questions about submitting specimens for testing.

General measles information

- Measles is a serious respiratory disease caused by a virus.
 - Measles starts with a fever. Soon after, it causes a cough, runny nose, and red eyes. Then a rash of tiny, red spots breaks out. It starts at the head and spreads to the rest of the body. The rash can last for a week, and coughing can last for 10 days.
- Measles is highly contagious and spreads through the air when an infected person coughs or sneezes.
- Measles can cause serious health complications, such as pneumonia or encephalitis, and even death.
 - Children younger than 5 years of age and adults older than 20 years of age are at high risk of getting a serious case of measles.
 - About 1 in 4 unvaccinated people in the U.S. who get measles will be hospitalized; about 1 in 500 may die.

Measles elimination in the U.S. and importation

- Measles was declared eliminated (absence of continuous disease transmission for greater than 12 months) from the U.S. in 2000 thanks to a highly effective vaccination program.
 - Measles is still commonly transmitted (endemic or large outbreaks) in many parts of the world. This includes Europe, Asia, the Pacific, and Africa. Worldwide, an estimated 20 million people get measles and 122,000 die from the disease each year.
- Before the U.S. measles vaccination program started in 1963, about 3–4 million people in the U.S. got measles each year; 400–500 of them died, 48,000 were hospitalized, and 4,000 developed encephalitis because of measles.
- Importation of measles into the U.S. will continue.
 - Since 2000, when measles was declared eliminated from the U.S., the annual number of people reported to have measles ranged from a low of 37 people in 2004 to a high of 644 people in 2014.
 - Unvaccinated U.S. residents traveling overseas are at risk for measles. Returning U.S. residents and foreign visitors to the U.S. may develop measles and expose unvaccinated and vaccinated people in the U.S.
- When measles gets into communities of unvaccinated people in the U.S. (such as people who refuse vaccines for religious, philosophical or personal reasons), outbreaks are more likely to occur. These communities make it difficult to control the spread of the disease and make us vulnerable to having the virus re-establish itself in our country again.
 - High measles vaccine coverage and rapid public health response are critical for preventing and controlling measles cases and outbreaks.
- One in 12 children in the United States is not receiving his first dose of MMR vaccine on time, underscoring considerable measles susceptibility across the country.
 - In 2013, 95% of the children aged 19–35 months in 10 states had received at least one dose of MMR vaccine, while in 17 other states, less than 90% of the children had received at least one dose. MMR vaccine coverage levels continue to vary by state.
 - In 2013, national vaccination coverage among children aged 19–35 months in the U.S. was 91.9% for one or more doses of MMR vaccine. Coverage remained stable relative to 2012.
- State and local health departments have the lead in investigating measles cases and outbreaks when they occur.
 - CDC helps and supports health departments in these investigations by—
 - providing technical support for measles prevention and control
 - testing specimens from patients with suspected measles infection
 - providing rapid assistance on the ground during outbreak investigations, often through a formal request from the state health department.

Past measles cases and outbreaks

- In 2014, 644 people from 27 states in the U.S. have been reported as having measles. This is the greatest number of measles cases reported in the U.S. since measles was declared eliminated in 2000.
 - Most of these people were not vaccinated or did not know their vaccination status.
 - 60 of these people brought measles into the U.S. after getting infected in other countries; 25 of them got infected in the Philippines. Some of them spread measles to other people in the U.S.
- In 2014, 23 measles outbreaks were reported, accounting for 89% of cases.
 - A large outbreak in Ohio resulted in 383 cases.

- In 2013, 189 people in the U.S. were reported as having measles.
- In 2013, there were 11 measles outbreaks in various U.S. communities.
 - An outbreak in New York resulted in 58 cases.
 - An outbreak in North Carolina resulted in 23 cases.
 - An outbreak in Texas resulted in 21 cases.
- In 2012, 55 people in the U.S. were reported as having measles.
- In 2011, 220 people in the U.S. were reported as having measles; this is the second greatest number of cases reported in the U.S. since measles was declared eliminated in 2000.
 - More than 30 countries in the WHO European Region reported an increase in measles in 2011, and France was experiencing a large outbreak. Most of the cases that were brought to the U.S. in 2011 came from France.

See CDC's Measles Cases and Outbreaks website (<http://www.cdc.gov/measles/cases-outbreaks.html>) for more information.

Guidance for healthcare providers and healthcare settings

- Healthcare providers should be vigilant about measles—
 - Ensure all patients are up to date on measles, mumps, rubella (MMR) vaccine.
 - Consider measles in patients presenting with febrile rash illness and clinically compatible measles symptoms [cough, coryza (or runny nose) and conjunctivitis], and ask patients about recent travel internationally or to domestic venues frequented by international travelers, as well as a history of measles exposures in their communities.
 - Promptly isolate patients with suspected measles to avoid disease transmission and immediately report the suspect measles case to their health department.
 - Obtain specimens for testing from patients with suspected measles, including viral specimens for genotyping, which can help determine the source of the virus. Contact the local health department with questions about submitting specimens for testing.
- People who work in healthcare settings should have documented evidence of immunity to measles according to the Advisory Committee on Immunization Practices.
 - Refer to “Immunization of Health-Care Personnel: Recommendations of the Advisory Committee on Immunization Practices” (www.cdc.gov/mmwr/pdf/rr/rr6007.pdf).
- Measles outbreaks in healthcare settings can disrupt care of patients and put them at higher risk for severe disease. This is especially important for patients who have underlying medical conditions, including weakened immune systems.

Measles vaccination recommendations

- CDC recommends that people of all ages keep up to date with their vaccinations.
 - Children should receive two doses of measles, mumps, rubella (MMR) vaccine—the first dose at 12 through 15 months of age and the second dose 4 through 6 years of age. Giving the second dose of the vaccine earlier is allowed at any time as long as it is at least 28 days after the first dose.
 - Unless they have evidence of measles immunity, college and other students, health care personnel, and international travelers need 2 appropriately spaced doses and other adults need 1 dose. Ask your health care provider if you have questions about whether you need MMR vaccine.

- For those who travel internationally, CDC recommends that all U.S. residents older than 6 months be protected from measles and receive MMR vaccine, if needed, prior to departure.
 - o Infants 6 through 11 months old should receive 1 dose of MMR vaccine before departure.[†]
 - o Children 12 months of age or older should have documentation of 2 doses of MMR vaccine (separated by at least 28 days).
 - o Teenagers and adults without evidence of measles immunity** should have documentation of 2 appropriately spaced doses of MMR vaccine.
- One dose of MMR vaccine is about 93% effective at preventing measles; two doses are about 97% effective.
 - o Almost everyone who does not respond to the measles component of the first dose of MMR vaccine at age 12 months or older will respond to the second dose. Therefore, the second dose of MMR is administered to address primary vaccine failure.

[†] Infants who receive a dose of MMR vaccine before their first birthday should receive 2 more doses of MMR vaccine, the first of which should be administered when the child is 12 through 15 months of age and the second at least 28 days later.

** One of the following is considered evidence of measles immunity for international travelers:

1. documentation of age-appropriate vaccination with a live measles virus-containing vaccine:
 - infants age 6–11 months: 1 dose
 - persons age ≥ 12 months: 2 doses, or
2. laboratory evidence of immunity, or
3. laboratory confirmation of disease, or
4. born before 1957